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V. Extract of a Letter of Mr. Edw Berkeley from Naples, giving several curious Observations and Remarks on the Eruptions of Fire and Smoak from Mount V E S U V I O. Communicated by Dr. John Arbuthnot, M. D. and R. S. S.

April 17. 1717. with much Difficulty I reach'd the top of Mount *Vesuvius*. in which I saw a vast Aperture full of smoak, which hinder'd the seeing its Depth and Figure. I heard within that horrid Gult certain odd Sounds, which seem'd to proceed from the Belly of the Mountain; a sort of Murmuring, Sighing, Throbbing, Churning, Dashing (as it were) of Waves, and between whiles a Noise like that of Thunder or Cannon, which was constantly attended with a Clattering, like that of Tiles falling from the Tops of Houses on the Streets. Sometimes, as the Wind changed, the Smoak grew thinner, discovering a very ruddy Flame, and the Jaws of the Pan or *Crater*, streak'd with Red, and several Shades of Yellow. After an Hour's stay, the Smoak, being moved by the Wind, gave us short and partial Prospects of the great Hollow, in the flat Bottom of which I could discern two Furnaces almost contiguous; that on the Left, seeming about three Yards in Diameter, glow'd with red Flame, and threw up red-hot Stones with a hideous Noise, which, as they fell back, caus'd the fore mentioned Clattering. *May 8.* in the Morning, I ascended to the Top of *Vesuvius* a second time, and found a different face of things. The Smoak ascending upright, gave

gave a full Prospect of the *Crater*, which, as I could judge, is about a Mile in Circumference, and an Hundred Yards deep. A conical Mount had been formed since my last Visit, in the middle of the Bottom. This Mount I could see was made of the Stones thrown up and fallen back again into the *Crater*. In this new Hill remained the two Mouths or Furnaces already mention'd; that on our Left Hand was in the *Vertex* of the Hill which it had formed round it, and raged more violently than before, throwing up every three or four Minutes, with a dreadful Bellowing, a vast Number of red-hot Stones, sometimes in appearance above a Thousand, and at least 300 Foot higher than my Head as I stood upon the Brink. But there being little or no Wind, they fell back perpendicularly into the *Crater*, increasing the conical Hill. The other Mouth to the Right was lower in the side of the same new formed Hill. I cou'd discern it to be fill'd with red-hot liquid Matter, like that in the Furnace of a Glass-House, which raged and wrought as the Waves of the Sea, causing a short abrupt Noise like what may be imagin'd to proceed from a Sea of Quicksilver dashing among uneven Rocks. This Stuff wou'd sometimes spew over and run down the convex side of the conical Hill, and appearing at first red-hot, it changed Colour, and harden'd as it cool'd, shewing the first Rudiments of an Eruption, or if I may so say, an Eruption in Miniature. Had the Wind driven in our Faces, we had been in no small Danger of stifling by the sulphurous Smoak, or being knock'd on the Head by Lumps of molten Minerals, which we saw had sometimes fallen on the Brink of the *Crater*, upon thoe shots from the Gulf at Bottom. But as the Wind was favourable, I had an opportunity to survey this odd Scene for above an Hour and a half together;

together; during which it was very observable, that all the Volleys of Smoak, Flame, and burning Stones, came only out of the Hole to our left, while the liquid Stuff in the other Mouth wrought and overflow'd as hath been already described. *June 5.* After a horrid Noise, the Mountain was seen at *Naples* to spew a little out of the *Crater*. The same continu'd the 6th. The 7th, nothing was observ'd till within two Hours of Night, when it began a hideous bellowing, which continued all that Night and the next Day till Noon, causing the Windows, and as some affirm the very Houses in *Naples* to shake. From that time it spew'd vast Quantities of molten Stuff to the South, which stream'd down the side of the Mountain, like a great Pot boylng over. This Evening I return'd from a Voyage thro' *Apulia*, and was surprised, passing by the North side of the Mountain, to see a great Quantity of ruddy Smoak lie along a huge Tract of Sky over the River of molten Stuff, which was it self out of sight. The 9th, *Vesuvius* raged less violently: that Night we saw from *Naples* a Column of Fire shoot between whiles out of its summit. The 10th, when we thought all wou'd have been over, the Mountain grew very outragious again, roaring and groaning most dreadfully. You cannot form a juster dea of this Noise in the most violent Fits of it, than by imaginng a mix'd Sound made up of the raging of a Tempeit, the Murmur of a troubled Sea, and the Roaring of Thunder and Artillery, confused all together. It was very terrible as we heard it in the further End of *Naples*, at the Distance of above twelve Miles. This moved my Curiosity to approach the Mountain. Three or four of us got into a Boat, and were set a-shoar at *Torre del Greco*, a Town situate at the Foot of *Vesuvius* to the South-

South-West, whence we rode four or five Miles before we came to the burning River, which was about Mid-Night. The Roaring of the *Volcano* grew exceeding loud and horrible as we approach'd. I observed a Mixture of Colours in the Cloud over the *Crater*, green, yellow, red and blue; there was likewise a ruddy dismal Light in the Air over that Tract of Land where the burning River flowed; Ashes continually shower'd on us all the way from the Sea-Coast. All which Circumstances, set off and augmented by the Horror and Silence of the Night, made a Scene the most uncommon and astonishing I ever saw; which grew still more extraordinary as we came nearer the Stream. Imagine a vast Torrent of liquid Fire rolling from the Top down the Side of the Mountain, and with irresistible Fury bearing down and consuming Vines, Olives, Fig-trees, Houses, in a word, every thing that stood in its way. This mighty Flood divided into different Channels, according to the Inequalities of the Mountain. The largest Stream seem'd half a Mile broad at least, and five Miles long. The Nature and Consistence of these burning Torrents hath been described, with so much Exactness and Truth, by *Borellus*, in his Latin Treatise of *Mount Ætna*, that I need say nothing of it. I walked so far before my Companions, up the Mountain along the side of the River of Fire, that I was oblig'd to retire in great haste, the sulphureous Steam having surpriz'd me, and almost taken away my Breath. During our Return, which was about Three-a-Clock in the Morning, we constantly heard the Murmur and Groaning of the Mountain, which between whiles would burst out into louder Peals, throwing up huge Spouts of Fire and burning Stones, which falling down again resembled the Stars in our Rockets. Sometimes I ob-

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serv'd two, at others three distinct Columns of Flame, and sometimes one vast one that seem'd to fill the whole *Crater*. These burning Columns, and the fiery Stones seem'd to be shot a 1000 Foot perpendicular above the Summit of the *Volcano*. The 11th at Night, I observ'd it, from a Terrass in *Naples*, to throw up incessantly a vast Body of Fire and great Stones to a surprising Height. The 12th in the Morning, it darken'd the Sun with Ashes and Smoak, causing a sort of Eclipse. Horrid Bellowings this and the foregoing Day were heard at *Naples*, whither part of the Ashes also reached. At Night I observed it throw up Flame, as on the 11th. On the 13th, the Wind changing, we saw a Pillar of black Smoak shot upright to a prodigious Height. At Night I observed the Mount cast up Fire as before, tho' not so distinctly because of the Smoak. The 14th, A thick black Cloud hid the Mountain from *Naples*. The 15th, in the Morning, the Court and Walls of our House in *Naples* were cover'd with Ashes. In the Evening, Flame appear'd on the Mountain thro' the Cloud. The 16th, the Smoak was driven by a Westerly Wind from the Town to the opposite side of the Mountain. The 17th, the Smoak appear'd much diminish'd, fat and greasy. The 18th, the whole Appearance ended, the Mountain remaining perfectly quiet without any visible Smoak or Flame. A Gentleman of my Acquaintance, whose Window look'd toward *Vesuvius*, assur'd me, that he observ'd this Night several Flashes, as it were of Lightening, issue out of the Mouth of the *Volcano*. It is not worth while to trouble you with the Conjectures I have formed concerning the Cause of these Phænomena, from what I observed in the *Lacus Amsancti*, the *Solfatara*, &c. as well as in Mount *Vesuvius*. One thing I may venture to say, that I saw the fluid Matter rise out of the Centre

of the Bottom of the *Crater*, out of the very middle of the Mountain, contrary to what *Borellius* imagines, whose Method of explaining the Eruption of a *Volcano* by an inflexed Syphon, and the Rules of *Hydrostaticks*, is likewise inconsistent with the Torrent's flowing down from the very *Vertex* of the Mountain. I have not seen the *Crater* since the Eruption, but design to visit it again before I leave *Naples*. I doubt there is nothing in this worth shewing the Society ; as to that, you will use your Discretion.

E. Berkeley.

VI. *An Account of an extraordinary TUMOUR or WEN lately cut off the Cheek of a Person in Scotland. Communicated to the Royal Society by Dr. Thomas Bower, M. D. and F. R. S.*

IT is generally acknowledg'd, that the exact Observation of internal Diseases, and the faithful Accounts of external Tumours, and extraordinary Cases in Chirurgery, have contributed very much to the Advancement of Medicine. *Hippocrates* and *Galen*, and other ancient Fathers of Medicine, have set us fair Copies of this ; and the Moderns, happily following their Footsteps, have illustrated this Matter by many curious Observations and Reflections. The Royal Societies and Colleges of *Virtuosi*, that are now over all *Europe*, have taken much pains in this Affair, and have given us many Instances and Examples of Extraordinary Cases in Medicine, which are of great use to all the Practisers of Physick and Chirurgery. According to these laudable Examples I shall, for the Satisfaction